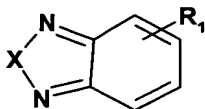


Amendments to the claims:

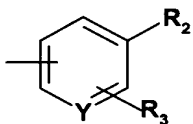
JC17 Rec'd PCT/PTO 12 SEP 2005

1. (original) A compound of formula I



I

wherein X is O or S, R<sub>1</sub> is 5-(2-fluoro-ethylamino)-thiazol-2-yl, 5-(2-<sup>18</sup>F-ethylamino)-thiazol-2-yl or a group of formula (a)

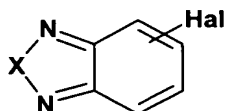


(a)

wherein Y is CH or N, R<sub>2</sub> is NHCH<sub>3</sub>, NH<sup>11</sup>CH<sub>3</sub>, N(CH<sub>3</sub>)<sup>11</sup>CH<sub>3</sub>, N(CH<sub>3</sub>)<sub>2</sub>, N(<sup>11</sup>CH<sub>3</sub>)<sub>2</sub>, NH(CH<sub>2</sub>)<sub>n</sub>F, NH(CH<sub>2</sub>)<sub>n</sub><sup>18</sup>F, N(CH<sub>3</sub>)-(CH<sub>2</sub>)<sub>n</sub>F, N(CH<sub>3</sub>)-(CH<sub>2</sub>)<sub>n</sub><sup>18</sup>F, O-(CH<sub>2</sub>)<sub>n</sub>F, O-(CH<sub>2</sub>)<sub>n</sub><sup>18</sup>F, CONH(CH<sub>2</sub>)<sub>n</sub>F or CONH(CH<sub>2</sub>)<sub>n</sub><sup>18</sup>F (n being in each case 2 to 4) and R<sub>3</sub> is hydroxy, (C1-4)alkoxy, hydrogen or nitro, in free base or acid addition salt form.

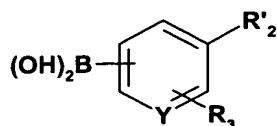
2. (original) A process for the production of a compound of formula I as defined in claim 1 and its salts, comprising the steps of

a) for the production of a compound of formula I which contains no <sup>11</sup>C or <sup>18</sup>F atom, reacting a compound of formula II



II

wherein X is as defined in claim 1 and Hal is Cl, Br or I, with 5-(2-fluoro-ethylamino)thiazolyl-2-boronic acid or a compound of formula III



III

wherein Y and R<sub>3</sub> are as defined above and R'<sub>2</sub> is a group R<sub>2</sub> as defined above which contains no <sup>11</sup>C or <sup>18</sup>F atom, or

b) for the production of a compound of formula I wherein R<sub>1</sub> is 5-(2-<sup>18</sup>F-ethylamino)-thiazol-2-yl, reacting a compound of formula I wherein R<sub>1</sub> is 5-(2-mesyloxy-ethylamino)-thiazol-2-yl or 5-(2-tosyloxy-ethylamino)-thiazol-2-yl with <sup>18</sup>F<sup>⊖</sup>, or

c) for the production of a compound of formula I wherein R<sub>2</sub> is NH<sup>11</sup>CH<sub>3</sub>, N(CH<sub>3</sub>)<sup>11</sup>CH<sub>3</sub> or N(<sup>11</sup>CH<sub>3</sub>)<sub>2</sub>, reacting a compound of formula I wherein R<sub>2</sub> is NH<sub>2</sub> or NHCH<sub>3</sub> with <sup>11</sup>CH<sub>3</sub>I, or

d) for the production of a compound of formula I wherein R<sub>2</sub> is NH(CH<sub>2</sub>)<sub>n</sub><sup>18</sup>F, N(CH<sub>3</sub>)-(CH<sub>2</sub>)<sub>n</sub><sup>18</sup>F, O-(CH<sub>2</sub>)<sub>n</sub><sup>18</sup>F or CONH(CH<sub>2</sub>)<sub>n</sub><sup>18</sup>F, reacting a compound of formula I wherein R<sub>2</sub> is, respectively, NH(CH<sub>2</sub>)<sub>n</sub>OTs or NH(CH<sub>2</sub>)<sub>n</sub>OMs, N(CH<sub>3</sub>)-(CH<sub>2</sub>)<sub>n</sub>OTs or N(CH<sub>3</sub>)-(CH<sub>2</sub>)<sub>n</sub>-OMs, O-(CH<sub>2</sub>)<sub>n</sub>OTs or O-(CH<sub>2</sub>)<sub>n</sub>-OMs, or CONH(CH<sub>2</sub>)<sub>n</sub>OTs or ONH(CH<sub>2</sub>)<sub>n</sub>OMs, with <sup>18</sup>F<sup>⊖</sup>,

and recovering the resulting compound of formula I in free base form or in form of an acid addition salt.

3. (original) A composition for labeling histopathological structures in vitro or in vivo, comprising a compound of formula I as defined in claim 1, in free base or acid addition salt form.
4. (original) A method for labeling histopathological structures in vitro or in vivo, comprising contacting brain tissue with a compound of formula I as defined in claim 1, in free base or acid addition salt form.
5. (original) A method according to claim 4, for labeling β-amyloid deposits.
6. (currently amended) A method according to claim 4 or 5, comprising administering the compound of formula I to a patient.

7. (currently amended) A method according to any of claims 4 to 6, comprising the further step of determining whether the compound of formula I labeled the target structure.
8. (original) A method according to claim 7, comprising observing the target structure labeled with a non-radioactive compound of formula I, using fluorescence microscopy.
9. (original) A method according to claim 7, comprising observing the target structure labeled with a radioactive compound of formula I, using positron emission tomography (PET).
10. (currently amended) A method according to ~~any one of~~ claims 4 to 7, and 9 for diagnosing Alzheimer's disease.
11. (original) A method according to claim 10, for monitoring the effectiveness of a therapeutic treatment of Alzheimer's disease.
12. (currently amended) A method according to ~~any of~~ claims 4, 5, 7 and 8, for detecting histopathological hallmarks of Alzheimer's disease.
13. (cancelled)
14. (original) A package comprising a compound of formula I wherein  $R_2$  is  $NH_2$  or  $NHCH_3$  together with instructions for the production of a compound of formula I wherein  $R_2$  is  $NH^{11}CH_3$ ,  $N(CH_3)^{11}CH_3$  or  $N(^{11}CH_3)_2$  by reaction of the starting material with freshly prepared  $^{11}CH_3I$ .
15. (original) A package comprising as starting material a compound of formula I wherein  $R_2$  is  $NH(CH_2)_nOTs$ ,  $NH(CH_2)_nOMs$ ,  $N(CH_3)-(CH_2)_nOTs$ ,  $N(CH_3)-(CH_2)_nOMs$ ,  $O-(CH_2)_nOTs$ ,  $O-(CH_2)_n-OMs$ ,  $CONH(CH_2)_nOTs$  or  $ONH(CH_2)_nOMs$ , wherein  $OMs$  corresponds to mesylate and  $OTs$  to tosylate, together with instructions for the production of a compound of formula I wherein  $R_2$  is  $NH(CH_2)_n^{18}F$ ,  $N(CH_3)-(CH_2)_n^{18}F$ ,  $O-(CH_2)_n^{18}F$  or  $CONH(CH_2)_n^{18}F$  by a suitable reaction cascade of the starting material with  $^{18}F^\ominus$ .